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#### RESEARCH ON PESTICIDE RESIDUES IN 1956 AT THE STATE AGRICULTURAL EXPERIMENT STATIONS

#### March 1957

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# PESTICIDE RESIDUES

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Prepared primarily for the use of workers in agricultural research in the subject matter areas presented.

Data supplied by State Agricultural Experiment Stations

Compiled in the State Experiment Stations Division Agricultural Research Service United States Department of Agriculture Washington, D. C.

#### FOREWORD

The passage of the Pesticide Chemical Residues Amendment (Public Law 518, often called the Miller Amendment) to the Food, Drug and Cosmetic Act focused attention on the need for additional information on pesticide residues. To make the information available on the pesticide residue research in progress at the State Agricultural Experiment Stations, it was suggested that a list be prepared. To facilitate the assembling of this information, the State Experiment Stations Division, Agricultural Research Service, United States Department of Agriculture sent a form to each State agricultural experiment station asking that they list the pesticide residue research that was active at the station in 1956. The following is a compilation of the information received from the State agricultural experiment stations. The Pesticide Chemical Residue Amendment does not deal directly with pesticide residues in soil. However, pesticide residues in soil may be absorbed by the roots and enter into agricultural commodities in this manner. The close relationship between research on pesticide residues in soils and in agricultural commodities appeared to warrant its inclusion in this listing.

It is hoped that this list will facilitate the exchange of information on pesticide residues, methods of determining them and related subjects pertaining to pesticide residues. Any requests for further information should be directed to the station doing the research.

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## ANIMAL OR ANIMAL PRODUCTS

Toxicant

Entomologist, Plant Pathologist etc.

Analyst State

ANIMAL OR PRODUCT NOT SPECI	FIED		
Chlorinated Hydrocarbons  " DDT Dieldrin	G.C. Decker D.P. Furman  F.S. Barkalow	N. Gannon W.M. Hoskins W.H. Orgell T.G. Bowery	Illinois Calif.(Riverside) Iowa North Carolina
Endrin Heptachlor Organic Phosphates	L.E. Harris	J.C. Street "W.H. Orgell	Utah " Iowa
Toxaphene Toxicant not indicated	G.H. Blake H.C. Fink	D.E.H. Frear	Alabama Pennsylvania
ANIMAL TISSUES			
BEEF CATTLE			
Endrin		L.C. Terriere	Oregon
CATTLE			
Butadiene Furfural Copolymer Malathion	D.E. Howell	V.G. Heller	Oklahoma
DAIRY CATTLE			
Endrin Organic Phosphates		L.C. Terriere J.E. Casida	Oregon Wisconsin
DOGS			
Organic Phosphates		J.E. Casida	Wisconsin
POULTRY			
BHC Endrin Malathion	J.S. Roussel J.M. Grayson	E.A. Epps L.C. Terriere J.F. Eheart	Louisiana Oregon Virginia
RATS			
Organic Phosphates	Mark Mark	J.E. Casida	Wisconsin

	- 2 -		
SWINE			
Endrin		L.C. Terriere	Oregon
EGGS			
Endrin Heptachlor	L.E. Harris	J.C. Street	Utah "
Toxicant not indicated	H.C. Fink	D.E.H. Frear	Pennsylvania
MILK			
BHC	C.R. Weaver		Ohio
Chlorinated Hydrocarbons	G.C. Decker	John Matteson	Illinois
Endrin Heptachlor	L.E. Harris	J.C. Street	Utah
Lindane	H.H. Schwardt	D.J. Lisk	N.Y. (Cornell)
Malathion	Ray Hutson	E.J. Benne	Michigan
11	J.M. Grayson	J.F. Eheart	Virginia
Methoxychlor Toxicant not	B.B. Pepper H.C. Fink	S.B. Randle D.E.H. Frear	New Jersey Pennsylvania
indicated	Πουο ΓΙΠΚ	D.E.H. Frear	t emph traina
	FIBER CROPS		
	ntomologist, nt Pathologist	Analyst	State
	ntomologist,	Analyst	State
Toxicant Pla	ntomologist, nt Pathologist	Analyst H.J. Webb	State South Carolina
Toxicant Plan	ntomologist, nt Pathologist etc.		
Toxicant Plan  COTTON  BHC  TOXICATE Plan  COTTON	ntomologist, nt Pathologist etc.  J.K. Reed N.M. Randolph J.S. Roussel	H.J. Webb R.D. Chisholm, USDA J.W. Torbert	South Carolina Texas Louisiana
Toxicant Plan  COTTON  BHC  Calcium Arsenate Chlordane	ntomologist, nt Pathologist etc.  J.K. Reed N.M. Randolph J.S. Roussel A.D. Telford	H.J. Webb R.D. Chisholm, USDA	South Carolina Texas Louisiana Arizona
Toxicant Plan  COTTON  BHC  TOXICATE Plan  COTTON	J.K. Reed N.M. Randolph  J.S. Roussel A.D. Telford	H.J. Webb R.D. Chisholm, USDA J.W. Torbert J.M. Witt	South Carolina Texas Louisiana Arizona
Toxicant Plan  COTTON  BHC  "  Calcium Arsenate Chlordane DDT	ntomologist, nt Pathologist etc.  J.K. Reed N.M. Randolph J.S. Roussel A.D. Telford	H.J. Webb R.D. Chisholm, USDA J.W. Torbert	South Carolina Texas Louisiana Arizona
Toxicant Plan  COTTON  BHC  "  Calcium Arsenate Chlordane DDT	J.K. Reed N.M. Randolph  J.S. Roussel A.D. Telford	H.J. Webb R.D. Chisholm, USDA J.W. Torbert J.M. Witt " R.D. Chisholm,	South Carolina Texas Louisiana Arizona
Toxicant Plan  COTTON  BHC  Calcium Arsenate Chlordane DDT  Dieldrin  Endrin	J.K. Reed N.M. Randolph  J.S. Roussel A.D. Telford	H.J. Webb R.D. Chisholm, USDA J.W. Torbert J.M. Witt "" R.D. Chisholm, USDA R.D. Chisholm,	South Carolina Texas Louisiana Arizona " Texas
Toxicant Plan  COTTON  BHC  Calcium Arsenate Chlordane DDT  Dieldrin Endrin Guthion(Cotton seed)	J.K. Reed N.M. Randolph J.S. Roussel A.D. Telford " N.M. Randolph  N.M. Randolph  J.K. Reed W.D. Wylie	H.J. Webb R.D. Chisholm, USDA J.W. Torbert J.M. Witt "R.D. Chisholm, USDA R.D. Chisholm, USDA H.J. Webb	South Carolina Texas Louisiana Arizona " Texas
Toxicant Plan  COTTON  BHC  Calcium Arsenate Chlordane DDT  Dieldrin  Endrin Guthion(Cotton seed) Parathion	J.K. Reed N.M. Randolph  J.S. Roussel A.D. Telford  " N.M. Randolph  N.M. Randolph  N.M. Randolph  N.M. Randolph  Randolph  J.K. Reed W.D. Wylie N.M. Randolph	H.J. Webb R.D. Chisholm, USDA J.W. Torbert J.M. Witt "R.D. Chisholm, USDA R.D. Chisholm, USDA H.J. Webb R.D. Chisholm, USDA	South Carolina Texas Louisiana Arizona " Texas " South Carolina Arkansas Texas
Toxicant Plan  COTTON  BHC  Calcium Arsenate Chlordane DDT  Dieldrin Endrin Guthion(Cotton seed)	J.K. Reed N.M. Randolph J.S. Roussel A.D. Telford " N.M. Randolph  N.M. Randolph  J.K. Reed W.D. Wylie	H.J. Webb R.D. Chisholm, USDA J.W. Torbert J.M. Witt " R.D. Chisholm, USDA R.D. Chisholm, USDA H.J. Webb R.D. Chisholm,	South Carolina Texas Louisiana Arizona " Texas
Toxicant Plan  COTTON  BHC  "  Calcium Arsenate Chlordane DDT  "  Dieldrin  Endrin Guthion(Cotton seed) Parathion  Toxaphene	J.K. Reed N.M. Randolph J.S. Roussel A.D. Telford N.M. Randolph N.M. Randolph  N.M. Randolph  J.K. Reed W.D. Wylie N.M. Randolph  J.K. Reed	H.J. Webb R.D. Chisholm, USDA J.W. Torbert J.M. Witt "R.D. Chisholm, USDA R.D. Chisholm, USDA H.J. Webb R.D. Chisholm, USDA H.J. Webb	South Carolina Texas Louisiana Arizona " Texas  " South Carolina Arkansas Texas South Carolina

# FIELD CROPS

Toxicant	Entomologist, Plant Pathologist etc.	Analyst	State
CORN (including swee	t corn)		
Aldrin  Dalapon  DDT  ""  ""  ""  ""  ""	Stirling Kyd R.R. Walton R.R. Walton J.H. Hawkins C.H. Brett L.H. Rolston M. Semel W.G. Genung	Shell Chemical Co. V.G. Heller K.P. Buchholtz V.G. Heller A.S. Getchell T.G. Bowery J.C. Carroll D.J. Lisk C.H. Van Middelem	Missouri Oklahoma Wisconsin Oklahoma Maine North Carolina Ohio New York(Cornell) Florida
Diazinon  n Dieldrin trendrin trendrin Parathion Phosdrin Thimet	F.P. Harrison P.J. Spangler W.R. Enns Stirling Kyd R.R. Walton Stirling Kyd R.R. Walton W.G. Genung H.E. Brown L.P. Ditman	Giegy Chemical N Shell Chemical Co. V.G. Heller Shell Chemical Co. V.G. Heller C.H. Van Middelem Shell Chemical Co.	Oklahoma Florida
PEANUTS			
Captan DDT Endrin Lindane PCP Thiram	W.E. Cooper G.H. Blake J.E. Roberts G.H. Blake W.E. Cooper	T.G. Bowery R.W. Storherr T.G. Bowery	North Carolina Alabama Georgia Alabama North Carolina
SORGHUM (Grain)			
BHC DDT Dieldrin Malathion Parathion Toxaphene	N.M. Randolph "" J.E. Roberts N.M. Randolph J.E. Roberts N.M. Randolph	R.H. Carter, USDA  """  R.W. Storherr  R.H. Carter, USDA  R.W. Storherr  R.H. Carter	Texas " " Georgia Texas Georgia Texas

SOYBEANS
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Aldrin Calcium Arsenate Chlordane	W.E. Burkholder J.S. Roussel W.E. Burkholder	L.W. Dawsey J.W. Torbett L.W. Dawsey	Georgia Louisiana Georgia -
Heptachlor	8.8	8.8	44
Toxaphene	E.W. Beck	99	8.8

#### SUGAR CANE

Systox J.S. Roussel J.B	B. McDevitt	Louisiana
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### TOBACCO

DDT	W.C. Rhoades	C.H. Van Middelem	Florida
Endrin	F.E. Guthrie	T.G. Bowery	North Carolina
Parathion	W.C. Rhoades	C.H. Van Middelem	Florida
Rhothane	F.E. Guthrie	T.G. Bowery	North Carolina
Toxaphene	88	99	11

#### CROP NOT INDICATED

Chlorinated Hydro- carbon and Organic Phosphates	R.F. Smith O.G. Bacon W.W. Middlekauff	W.M. Hoskins W.R. Erwin R. Miskus	California - (Berkeley)
Toxicant not indicated	H.T. Reynolds R.L. Metcalf	F.A. Gunther T.R. Fukuto	California - (Riverside)

# FORAGE

Toxicant	Entomologist,	Analyst	State
	Plant Pathologist	, and the second	
	etc.		

#### ALFALFA

Aldrin	R.J. Quinton	Shell Chemical	Connecticut
	D.M. Tuttle	J.M. Witt	Arizona
	Stirling Kyd	Shell Chemical	Missouri
BHC 't', CIPC (Analytical Methods)	C.R. Weaver H.C. Fink M. Schreiber	D.E.H. Frear D.J. Lisk	Ohio Pennsylvania N.Y. (Cornell)
Diazinon	L.B. Daniels		Colorado
	R.J. Quinton	Giegy Chemical	Connecticut

Dieldrin "" "" Endrin "" Heptachlor	R.J. Quinton Stirling Kyd B.B. Pepper J.R. Dogger R.J. Quinton Stirling Kyd G.A. Bieberdorf J.R. Dogger	Shell Chemical  S.B. Randle T.G. Bowery Shell Chemical  "V.G. Heller T.G. Bowery	Connecticut Missouri New Jersey North Carolina Connecticut Missouri Oklahoma North Carolina
Malathion " Methyl Parathion Parathion R-1303 Systox Toxaphene	J.E. Roberts J.R. Dogger Stirling Kyd G.A. Bieberdorf R.J. Quinton G.A. Bieberdorf  H.C. Fink	R.W. Storherr T.G. Bowery Monsanto Chemical V.G. Heller Stauffer Chemical Chemagro Chemical V.G. Heller D.E.H. Frear	Georgia North Carolina Missouri Oklahoma Connecticut Oklahoma " Pennsylvania
CLOVER			
Aldrin Diazinon Diazinon Dieldrin Endrin Heptachlor T Lindane Strobane Systox	G.G. Gyrisco  ""  H.C. Fink G.G. Gyrisco ""  L.C. Kuitert	D.J. Lisk  ff ff ff D.E.H. Frear D.J. Lisk ff ff C.H. Van Middelem	N.Y. (Cornell)  ''  ''  Pennsylvania N.Y. (Cornell)  ''  Florida
BERMUDA GRASS			
Aldrin Chlordane Heptachlor Toxaphene	E.W. Beck	L.H. Dawsey	Georgia "" ""
PASTURE GRASS			
Calcium Arsenate Heptachlor Malathion Parathion	J.S. Roussel J.R. Dogger W.G. Genung E.G. Kelsheimer W.G. Genung	J.W. Torbert T.G. Bowery C.H. Van Middelem	Louisiana North Carolina Florida

## PEANUT HAY

Charles			
DDT	W.C. Rhoades J.R. Dogger	C.H. Van Middelem T.G. Bowery	Florida North Carolina
Endrin Parathion Toxaphene	W.C. Rhoades J.R. Dogger	C.H. Van Middelem T.G. Bowery	Florida North Carolina
SOYBEAN FORAGE			
Dieldrin Toxaphene	J.R. Dogger	T.G. Bowery	North Carolina
BIRDSFCOT TREFOIL			
Dalapon	M. Schreiber	D.J. Lisk	N.Y.(Cornell)
MIXED FORAGE			
Aldrin DDT	G.G. Gyrisco	D.J. Lisk	N.Y.(Cornell)
Heptachlor	tt	11	tt
Malathion	tt	11	tt
Methoxychlor	11	Tt	tt
Parathion	tt .	TT.	11
CROP NOT INDICATED			
Dintros(Analytical Methods)	M. Schreiber	D.J. Lisk	N.Y.(Cornell)
DNOSBP "	11	11	11
Chlorinated Hydrocarbons	G.C. Decker	N. Gannon	Illinois
Mixtures	T.W. Kerr	C. Olney	Rhode Island
PCWB	D.A. Roberts	D.J. Lisk	N.Y. (Cornell)
Organic Phosphates		C.C. Roan	Kansas
Toxicant not			
indicated	T.A. Brindley	J.E. Fahey(USDA)	Iowa
11	G.C. Decker	John Matteson	Illinois
11	Norman Gannon	John Merboth	11

#### GRAINS

Toxicant	Entomologist, Plant Pathologist etc.	Analyst	State
BARLEY			
Toxaphene	P.C. Stone	Hercules Powder Co.	Missouri
OATS			
DDT Dieldrin	N.M. Randolph	R.H. Carter, USDA	Texas
Toxaphene	Stirling Kyd	Hercules Powder Co.	ilissouri
SMALL GRAINS			
Malathion Parathion	D.E. Howell	V.G. Heller	Oklahoma "
WHEAT			
Endrin Iso Systox Thimet Toxaphene	R.E. Pfadt H.E. Brown "Stirling Kyd J.A. Callenbach	Shell Chemical Co. Chemagro Chemical American Cyanamid Hercules Powder Co.	Wyoming Missouri " " North Dakota
STORED GRAINS			
Chlorinated Hydrocarbons	A.E. Michelbacher	W.M. Hoskins	California (Berkley)
TOXICANTS NOT INDICATED	D.L. Lindgren R.G. Strong	F.A. Gunther	Calif.(Riverside)

#### SMALL FRUIT

Toxicant	Entomologist, Plant Pathologist etc.	Analyst	State
BLACKBERRIES			
Malathion Parathion	G.H. Blake		Alabama "
BLUEBERRIES			
Dieldrin Malathion	B.E. Pepper	S.B. Randle	New Jersey
CRANBERRIES			
3 Amino 1,2,4 Triazole	R.J. Aldrich	S.B. Randle	New Jersey
Captan Perthane	E.W. Anthon Charles Doughty	R.R. Legault	Washington "
GRAPES			
Captan Carbamates DDT Diazinon	J.A. Cox " W.R. Enns	H.F. Enos " E.E. Pickett Giegy Chemical	Pennsylvania " Missouri "
Dieldrin Glyodin	J.A. Cox	Shell Chemical H.F. Enos	" Pennsyl <b>vani</b> a
Parathion General	W.R. Enns E.F. Taschenberg	E.E. Pickett	Missouri N.Y.(Geneva)
RASPBERRIES			
Fungicides		L.C. Terriere	Oregon
STRAWBERRIES			
Aramite Captan Carbamates Chlordane Chlorothion Dipterex	W.R. Enns B.J. Davis "E.G. Kelsheimer	U.S. Rubber Co. S.B. Randle "C.H. Van Middelem	Missouri New Jersey " Florida "
IPC Malathion "	R.E. Waites E.G. Kelsheimer	V.H. Freed C.H. Van Middelem	Oregon Florida "

Parathion	R.E. Waites E.G. Kelsheimer	C.H. Van Middelem	Florida
t1	W.R. Enns	E.E. Pickett	Missouri
t1		L.C. Terriere	Oregon
Systox	R.E. Waites	C.H. Van Middelem	Florida
Fungicides		L.C. Terriere	Oregon

#### CROP NOT INDICATED

Aramite	L.M.	Smith	W.M. Hoskins	Calif.(Berkeley)
tt .	W.W.	Allen	W.R. Erwin	11
11		n	R. Miskus	11
Chlorinated Hydro	carbons	11	n	n
Chlorinated Sulfa	ates	11	11	11
Cl Sulfonates		11	11	11
Cl Sulfides		11	11	Ħ
Organic Phosphate	es	11	11	17

#### TREE FRUITS

Toxicant	Entomologist, Plant Pathologist etc.	Analyst	State
APPLES			
Aramite " Captan " " " "	W.J. O'Neill Philip Garman C. F. Smith Dean Asquith A.B. Burrell W.J. O'Neill	L.C. Terriere R.R. Legault L.G. Kierstead T.G. Bowery D.E.H. Frear D.J. Lisk R.R. Legault L.C. Terriere	Oregon Washington Connecticut North Carolina Pennsylvania N.Y.(Cornell) Washington Oregon
Carbamates " " DDT " "	Dean Asquith A.B. Burrell G.A. Bieberdorf J.E. Dewey	"D.E.H. Frear D.J. Lisk V.G. Heller L.C. Terriere D.J. Lisk	" Pennsylvania N.Y.(Cornell) Oklahoma Oregon N.Y.(Cornell)
Diazinon "Dimite Dipterex "EPN Glyodin "	W.R. Enns W.J. O'Neill " W.R. Enns C.R. Cutright Philip Garman Dean Asquith A.B. Burrell	Giegy Chemical R.R. Legault " Chemagro Chemical J.C. Carroll L.G. Kierstead D.E.H. Frear D.J. Lisk	Missouri Washington " Missouri Ohio Connecticut Pennsylvania N.Y.(Cornell)
Heptachlor Karathane " Kelthane " Lead Arsenate Malathion	W.R. Enns A.B. Burrell W.J. O'Neill W.J. O'Neill Philip Garman C.F. Smith J.E. Dewey	Velsicol Corp. D.J. Lisk R.R. Legault L.C. Terriere R.R. Legault L.G. Kierstead T.G. Bowery	Missouri N.Y.(Cornell) Washington Oregon Washington Connecticut Morth Carolina N.Y.(Cornell)
Maneb Methoxychlor " " Ovex	Roderick Sprague Philip Garman C.F. Smith J.E. Dewey	R.R. Legault L.G. Kierstead T.G. Bowery D.J. Lisk L.C. Terriere	Washington Connecticut North Carolina N.Y.(Cornell) Oregon N.Y.(Cornell)

Parathion	L.B. Daniels Philip Garman C.F. Smith J.E. Dewey G.A. Bieberdorf	L.G. Kierstead T.G. Bowery V.G. Heller	Colorado Connecticut North Carolina N.Y.(Cornell) Oklahoma
Phenyl Mercury Acetate Phenyl Mercury	A.B. Burrell	D.J. Lisk	N.Y.(Cornell)
Lactate Quinex	tt tt	18 19	11
R6199 Sulfonone Sulphur(Mag 70) Systemic Phosphates Vancide M Ziram Miscellaneous	W.R. Enns W.J. O'Neill A.B. Burrell B.B. Pepper A.B. Burrell Roderick Sprague	Chipman Chemical R.R. Legault D.J. Lisk S.B. Randle D.J. Lisk R.R. Legault A.W. Avens	Missouri Washington N.Y.(Cornell) New Jersey N.Y.(Cornell) Washington N.Y.(Geneva)
AVACADOS			
Systox	D.O. Wolfenbarger	C.H. Van Middelem	Florida
CHERRIES			
Aramite Captan Carbamates	E.W. Anthon J.A. Cox	R.R. Legault D.E.H. Frear	Washington Pennsylvania
Chlorobenzilate Diazinon Dieldrin Glyodin	E.W. Anthon W.R. Enns G.A. Bieberdorf J.A. Cox	R.R. Legault Giegy Chemical V.G. Heller D.E.H. Frear	Washington Missouri Oklahoma Pennsylvania
Karathane Kelthane	E.W. Anthon	R.R. Legault	Washington
Parathion Perthane Sulfonone Fungicide (general) Insecticides (general)	M.E. Perez E.W. Anthon S.E. Lienk	J.A. Bonnet L.C. Terriere R.R. Legault L.C. Terriere A.W. Avens	Puerto Rico Oregon Washington Oregon N.Y.(Geneva)

#### CITRUS

The state of the s			
Dieldrin DNOCHP Endrin Malathion Ovex Parathion	D.M. Tuttle R.B. Johnson D.M. Tuttle W.L. Thompson R.B. Johnson W.L. Thompson D.M. Tuttle	J.M. Witt J.J. McBride J.M. Witt J.J. McBride " " J.M. Witt	Arizona Florida Arizona Florida " " Arizona
Sulphenone Sulphur Systox (Juice) Miscellaneous	R.B. Johnson " " R.L. Metcalf G.E. Carman L.R. Jeppson W.H. Ewart	J.J. McBride "" F.A. Gunther " " "	Florida " " Calif.(Riverside) " " "
LIMES			
Systox	D.O. Wolfenbarger	C.H. Van Middelem	Florida
PEACHES			

Aramite	E.W. Anthon	R.R. Legarit	Washington
Captan	Philip Garman	L.G. Kierstead	Connecticut
tt	B.J. Davis	S.B. Randle	New Jersey
tt	Dean Asquith	D.E.H. Frear	Pennsylvania
tt	E.W. Anthon	R.R. Legault	Washington
Carbamates	Philip Garman	L.G. Kierstead	Connecticut
11	B.J. Davis	S.B. Randle	New Jersey
n	Dean Asquith	D.E.H. Frear	Pennsylvania
11	F.B. Struble	E.I. duPont de Nemours Co.	Oklahoma
Chlorobenzilate	E.W. Anthon	R.R. Legault	Washington
Diazinon	W.R. Enns	Giegy Chemical	Missouri
11	E.W. Anthon	R.R. Legault	Washington
Dichlone Dieldrin	Philip Garman	L.G. Kierstead	Connecticut
11	C. F. Smith	T G BOWERS	Month Carolina

	O.F. DHLL OH	1.G. DOWSI')	Merch carotru
11	G.A. Bieberdorf	V.G. Heller	Oklahoma
Dimite	E.W. Anthon	R.R. Legualt	Washington
Dipterex	R.W. Rings	J.C. Carroll	Ohio
EPM	Philip Garman	L.G. Kierstead	Connecticut
Fungicides(General)		L.C. Terriere	Oregon
Glyodin	Dean Asquith	D.E.H. Frear	Pennsylvania
Hercules 528	C.F. Smith	T.G. Bowery	North Carolin
Insecticides	S.E. Lienk	A.W. Avens	N.Y. (Geneva)

Fungicides (General) L.C. Terrière Oregon  Hyodin Dean Asquith D.E.H. Frear Pennsylvania  Hercules 528 C.F. Smith T.G. Bowery North Carolin  Insecticides S.E. Lienk A.W. Avens N.Y. (Geneva)	EPN	Philip Garman	L.G. Kierstead	Connecticut
	Hyodin Hercules 528 Insecticides	Dean Asquith C.F. Smith	D.E.H. Frear T.G. Bowery	Pennsylvania North Carolina

Kelthane Malathion " Maneb Parathion " " Sulfonone	E.W. Anthon W.D. Wylie L.B. Daniels Roderick Sprague W.D. Wylie Philip Garman C.F. Smith E.W. Anthon	R.R. Legualt  R.R. Legault  L.G. Kierstead T.G. Bowery R.R. Legualt	Washington Arkansas Colorado Washington Arkansas Connecticut North Carolina Washington
PEARS			
Aramite " Chlorobenzilate DDT Diazinon Dimite Karathane	W.J. O'Neill " W.J. O'Neill "	L.C. Terriere R.R. Legault " L.C. Terriere R.R. Legault " "	Oregon Washington "Oregon Washington "
Kelthane " Mitox Sulfonone Ziram	W.J. O'Neill	L.C. Terriere R.R. Legault " " L.C. Terriere	Oregon Washington "" "Oregon
PECANS			
DDT	G.A. Bieberdorf	V.G. Heller	Oklahoma
PLUMS			
Aramite Chlorobenzilate Diazinon Kelthane Sulfonone	E.W. Anthon "W.R. Enns E.W. Anthon	R.R. Legault "Giegy Chemical R.R. Legault "	Washington Missouri Washington
PRUNES			
General	S.E. Lienk	A.W. Avens	N.Y.(Geneva)
GENERAL			
Aramite Chlorinated Hydrocarbons	E.M. Stafford H.F. Madsen	W.R. Erwin W.M. Hoskins	Calif.(Berkeley)
Chlorinated sulfates Cl-sulfides	F.M. Summers	R. Miskus	Calif.(Davis)
Cl-sulfonate Organic Phosphates	H.F. Madsen	W.M. Hoskins	" Calif.(Berkeley)

Toxicants not indicated	M.M. Barnes R.L. Metcalf J.C. Ortega	F.A. Gunther T. Fukuto	Calif.(Riverside)
11	G.C. Decker Norman Gannon	John Matteson John Merboth	Illinois
Miscellaneous	P.A. Dahm	001III 1:161 D001I	Iowa

### VEGETABLES

Toxicant	Entomologist, Plant Pathologist etc.	Analyst	State
ASPARAGUS			
Malathion 2-4D	L.P. Ditman	V.H. Freed	Maryland Oregon
BEANS			
Chlordane Chlorate-borate DDT " " (foliage deposit) Diazinon	R.E. Waites R.D. Sweet R.E. Waites L.P. Ditman C.H. Brett J.L. Brann	C.H. Van Middelem D.J. Lisk C.H. Van Middelem T.G. Bowery L.C. Terriere	Florida N.Y.(Cornell) Florida Maryland North Carolina N.Y.(Cornell) Oregon
Dieldrin Dilan Dipterex Endrin Malathion "	J.P. Sleesman C.H. Brett J.P. Sleesman C.H. Brett G.H. Blake R.E. Waites C. H. Brett R.R. Walton	J.C. Carroll T.G. Bowery J.C. Carroll T.G. Bowery C.H. Van Middelem T.G. Bowery V.G. Heller	Ohio North Carolina Ohio North Carolina Alabama Florida North Carolina Oklahoma
Methoxychlor Parathion " Systox	C.H. Brett R.E. Waites R.R. Walton R.E. Waites R.R. Walton	T.G. Bowery C.H. Van Middelem V.G. Heller C.H. Van Middelem V.G. Heller	North Carolina Florida Oklahoma Florida Oklahoma
Toxaphene " " Fungicides Fungicides(general) Insecticides (general)	G.H. Blake R.E. Waites C.H. Brett J.M. Hamilton	C.H. Van Middelem T.G. Bowery L.C. Terriere A.W. Avens	Alabama Florida North Carolina Oregon N.Y.(Geneva)

#### BEETS N.Y. (Geneva) General G.E.R. Hervey A.W. Avens BROCCOLI Florida Chlordane C.H. Van Middelem R.E. Waites Chlorothion E.G. Kelsheimer DDT Maryland L.P. Ditman 11 Diazinon Endrin N.Y. (Cornell) M. Semel D.J. Lisk Malathion Maryland L.P. Ditman D.J. Lisk N.Y. (Cornell) Parathion M. Semel 11 E.G. Kelsheimer C.H. Van Middelem Florida R.R. Legault Rhothane Paul Eide Washington Systox E.G. Kelsheimer C.H. Van Middelem Florida L.P. Ditman Maryland Thimet Toxaphene CABBAGE C.H. Van Middelem DDT J.W. Wilson Florida 11 E.G. Kelsheimer 11 11 W.G. Genung

13	D.M. Norris	tt .	11
Diazinon	J.W. Wilson	11	II .
11	D.M. Norris	11	11
Endrin	M. Semel	D.J. Lisk	N.Y.(Cornell)
Malathion	J.W. Wilson	C.H. Van Middelem	Florida
11	D.M. Norris	"	
Tf .	C.H. Brett	T.G. Bowery	North Carolina
Parathion	J.W. Wilson	C.H. Van Middelem	Florida
II .	W.G. Genung	11	41
TT .	D.M. Norris	11	11
11	M. Semel	D.J. Lisk	N.Y.(Cornell)
Systox	J.W. Wilson	C.H. Van Middelem	Florida
II .	E.G. Kelsheimer	11	ff.
Toxaphene	J.W. Wilson	11	11

#### CARROTS

Aldrin " Chlordane " DDT	B.B. Pepper Angus Howitt B.B. Pepper Angus Howitt B.B. Pepper	S.B. Randle R.R. Legault S.B. Randle R.R. Legault S.B. Randle	New Jersey Washington New Jersey Washington New Jersey
Dieldrin	TT .	tt	11
п	Angus Howitt	R.R. Legault	Washington

Endrin	B.B. Pepper	S.B. Randle	New Jersey
Heptachlor	. 11		**
11	J.E. Dewey	M.H.J. Weiden	N.Y. (Cornell)
	Angus Howitt	R.R. Legault	Washington
Lindane	B.B. Pepper	S.B. Randle	New Jersey
Nemagon Rhothane	11	11	11
Toxaphene	11		11
Fungicides		L.C. Terriere	
rungicides	ena zun	L.O. lefflere	Oregon
CAULIFLOWER			
Chlorothion	E.G. Kelsheimer	C.H. Van Middelem	Florida
Endrin	M. Semel	D.J. Lisk	N.Y. (Cornell)
Parathion	11	11	ii .
11	E.G. Kelsheimer	C.H. Van Middelem	Florida
Rhothane	Paul Eide	R.R. Legault	Washington
Systox	E.G. Kelsheimer	C.H. Van Middelem	Florida
CELEDA			
CELERY			
DDT	J.W. Wilson	C.H. Van Middelem	Florida
Ferbam	J.F. Darby	TI .	11
Malathion	J.W. Wilson	11	11
Parathion	11	11	11
Systox	ti .	11	11
Toxaphene	81	11	11
Zineb	J.F. Darby	C.H. Van Middelem	tt .
Ziram	11	tt	Ħ
COLLARDS			
DDT	C.H. Brett	T.G. Bowery	North Carolina
Endrin	11	11 d. Bowery	II
Lindane	11	11	17
Malathion	tt .	11	11
Methoxychlor	11	tt	tt
Toxaphene	11	11	11
CUCUMBERS			
Captan	W.E. Cooper	T C Borrows	North Carolina
Dipterex	J.P. Sleesman	T.G. Bowery J.C. Carroll	Ohio
Lindane	W.R. Enns	C.H. Gehrke	Missouri
	Merce Diffic	Oeme dem ke	TTOSOMT T
EGG PLANT			
Dieldrin	J.P. Sleesman		Ohio

ENDIVE			
DDT Systox	E.G. Kelsheimer	C.H. Van Middelem	Florida "
ESCAROLE			
Chlorothion Parathion Toxaphene	<ul><li>D. Harris</li><li>W.G. Genung</li><li>R.E. Waites</li></ul>	C.H. Van Middelem "	Florida " "
LETTUCE			
AC 528 Chlordane Chlorothion "CIPC DDT	P.D. Gerhardt R.E. Waites E.G. Kelsheimer E.D. Harris R.D. Sweet R.E. Waites J.H. Hawkins	J.M. Witt C.V. Van Middelem " " D.J. Lisk C.H. Van Middelem A.S. Getchell	Arizona Florida " " Y.Y.(Cornell) Florida Maine
Maneb Parathion Systox " Thimet " Zineb	R.S. Cox W.G. Genung R.E. Waites P.D. Gerhardt R.E. Waites P.D. Gerhardt R.S. Cox	C.H. Van Niddelem " " J.M. Witt C.H. Van Niddelem J.M. Witt C.H. Van Niddelem	Florida " Arizona Florida Arizona Florida
MELOUS			
Alanap Phosdrin	R.D. Sweet P.D. Gerhardt	D.J. Lisk J.M. Witt	N.Y.(Cornell) Arizona
MUSTARD GREENS			
Chlorothion	R.E. Waites	C.H. Van Middelem	Florida
OKRA			
Parathion	R.F. Waites	C.M. Van Middelem	Florida
OHIOUS			
Endrin Fungicides Penta "10"	Angus Howitt R.D. Sweet	R.R. Legault L.C. Terriere D.J. Lisk	Washington Oregon N.Y.(Cornell)
PEAS			
Toxaphene General	R.E. Waites G.E.R. Hervey	C.M. Van Middelem A.W. Avens	Florida N.Y.(Cornell)

Georgia

PIMIENTOS		
Malathion Toxaphene	J.E. Roberts	R.W. Storherr

#### POTATOES

Arsenite Chlordane DCB-60 DDT	R.D. Sweet D.M. Norris F.B. Struble J.S. Roussel	D.J. Lisk C.H. Van Middelem H.C. Austin	N.Y.(Cornell) Florida Oklahoma Louisiana
11	G.W. Simpson	A.S. Getchell	Maine
Methoxychlor	J.S. Roussel	F.L. Bonner	Louisiana
Mylone	F.B. Struble	Carbon & Carbide Chemical	Oklahoma
Systox	D.M. Norris J.S. Roussel	C.H. Van Middelem J.B. McDevitt	Florida Louisiana
Toxaphene	G.W. Simpson	A.S. Getchell	Maine
VC13	F.B. Struble	Virginia-Carolina Chemical	Oklahoma
Fungicides		L.C. Terriere	Oregon

#### RADISHES

Parathion	E.G. Kelsheimer	C.H. Van Middelem	Florida
Systox	11	n .	11

### SPINACH AND BEET TOPS

Aldrin Captan	L.P. Ditman F.B. Struble	Cal. Spray and	Maryland Oklahoma
CIPC Diazinon Dieldrin Dipterex	R.D. Sweet R.J. Quinton L.P. Ditman R.J. Quinton	D.J. Lisk Giegy Chemical Chemagro Chemical	N.Y.(Cornell) Connecticut Maryland Connecticut
Endrin Guthion Heptachlor " Malathion Parathion	B.B. Pepper R.J. Quinton" L.P. Ditman G.A. Bieberdorf B.B. Pepper G.A. Bierberdorf	S.B. Randle	New Jersey Connecticut " Maryland Oklahoma New Jersey Oklahoma
R-1303 Systox Toxaphene Zineb General	R.J. Quinton G.A. Bieberdorf L.P. Ditman F.B. Struble	Stauffer Chemical V.G. Heller  Rohm & Haas A.W. Avens	Connecticut Oklahoma Maryland Oklahoma N.Y.(Geneva)

#### SQUASH

DOJOADII			
Aldrin DCB-60 Mylone Systox	F.B. Struble	L.C. Terriere  Carbide & Carbon Chemical C.H. Van Middelem	Oregon Oklahoma " Florida
VC-13	F.B. Struble	Virginia-Carolina Chemical	Oklahoma
TOMATOES			
AC528 DDT " " Diazinon	P.D. Gerhardt L.B. Daniels C.H. Brett D.O. Wolfenbarger W.E. Bickley B.B. Pepper	J.M. Witt  T.G. Bowery C.H. Van Middelem  S.B. Randle	Arizona Colorado North Carolina Florida Maryland New Jersey
Dilan Dipterex Endrin EPN Lindane Malathion " "	C.H. Brett	C.H. Van Middelem J.C. Carroll T.G. Bowery C.H. Van Middelem T.G. Bowery C.H. Van Middelem S.B. Randle T.G. Bowery	Florida Ohio North Carolina Florida North Carolina Florida Maryland New Jersey North Carolina
Methoxychlor Parathion "	" R.E. Waites D.O. Wolfenbarger	". C.H. Van Middelem	" Florida "
Systox " Thimet Toxaphene " General TURNIP GREENS	P.D. Gerhardt R.E. Waites P.D. Gerhardt R.E. Waites C.H. Brett	J.M. Witt C.H. Van Middelem J.M. Witt C.H. Van Middelem T.G. Bowery A.W. Avens	Arizona Florida Arizona Florida North Carolina N.Y.(Geneva)
Isolan Parathion Pyrazoxon	R.E. Waites	C.H. Van Middelem	Florida " "

Isolan	R.E. Waites	C.H. Van Middelem	Florid
Parathion	11	11	11
Pyrazoxon	11	11	11
Malathion	11	11	11
Systox	11	11	11

#### CROP NOT INDICATED

Chlorinated Hydrocarbons an Organic Phosphates	d	W.H. Orgell	Iowa
II II II	W.H. Lange E.C. Carlson R.H. Sciaroni N.F. McCalley	W.M. Hoskins W.R. Erwin R. Miskus	Calif.(Berkeley)
Toxicant not indicated " "	L.D. Anderson R.L. Metcalf G.C. Decker Norman Gannon	F.A. Gunther T.R. Fukuto John Matteson John Merboth	Calif.(Riverside
	MISCELLANEOUS CRC		
Toxicant	Entomologist, Plant Pathologist etc.	Analyst	State
HOPS			
Fungicides	669 e13*	L.C. Terriere	Oregon
MUSHROOMS			
Fungicides	H.C. Fink	D.E.H. Frear	Pennsylvania
PEPPERMINT			
Fungicides	400 400	L.C. Terriere	Oregon
PINEAPPLES			
Endrin	M.E.PPerez	J.A. Bonnet	Puerto Rico

#### SOIL PESTICIDES

Toxicant	Entomologist, Plant Pathologist etc.	Analyst	State
Aldrin " " " Amino Triazole BHC (Peaches) " (Alfalfa) Chlordane (Peaches) C.M.U.(Asparagus) DDT DDT (Cotton)	G.C. Decker W.M. Kulash J.E. Dewey M. Schrieber W.D. Wylie C.R. Weaver W.D. Wylie E.M. Rahn G.C. Decker C.H. Thomas	N. Gannon T.G. Bowery E.P. Lichtenstein M.H.J. Weiden A.W. Avens D.J. Lisk C.W. Woodmansee N. Gannon H.J. Webb	Illinois North Carolina Wisconsin N.Y.(Cornell) N.Y.(Geneva) N.Y.(Grnell) Arkansas Ohio Arkansas Delaware Illinois South Carolina
Dieldrin (Peaches) "" "" Heptachlor "" "" Lindane Methoxychlor (Peaches) Parathion (Peaches) Toxaphene General Toxicant not	W.D. Wylie G.C. Decker C.W. Wingo J.E. Dewey G.C. Decker C.W. Wingo W.M. Kulash J.E. Dewey W.D. Wylie "G.C. Decker J.H. Lilly	N. Gannon  A.W. Avens E.P. Lichtenstein M.H.J. Weiden N. Gannon  A.W. Avens T.G. Bowery M.H.J. Weiden E.P. Lichtenstein  N. Gannon J.E. Fahey (USDA)	Arkansas Illinois Missouri N.Y.(Geneva) Wisconsin N.Y.(Cornell) Illinois Missouri N.Y.(Geneva) North Carolina N.Y.(Cornell) Wisconsin  Arkansas " Illinois Iowa
indicated	G.C. Decker Norman Gannon	John Matteson John Merboth	Illinois





